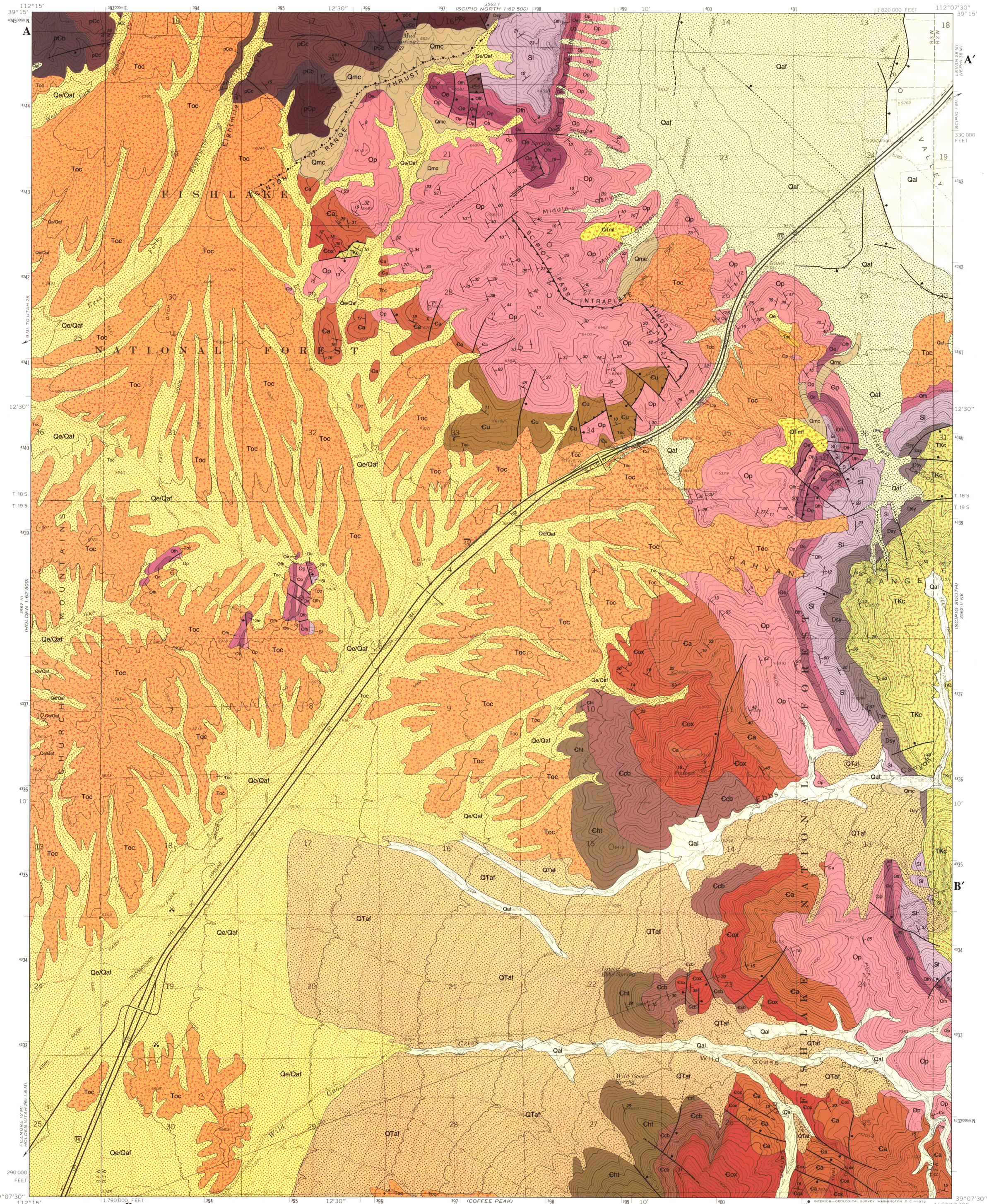
UTAH GEOLOGICAL SURVEY
a division of
UTAH DEPARTMENT OF NATURAL RESOURCES

Plate 1
Utah Geological Survey Map 164
Geologic Map of the Scipio Pass Quadrangle

3562 IV (CITY 1:62 500)
3562 I (SCIPIO NORTH 1:62 500)
3562 I (SCIPIO NORTH) 1:62 500



Base from U.S. Geological Survey,
Scipio Pass 7.5′ Quadrangle, 1969
Base modified 1994

Field work by R. Michaels 1983, 1985
Field work by L. Hintze 1990
Cartography by J. Parker

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1972

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

GEOLOGIC MAP OF THE SCIPIO PASS QUADRANGLE, MILLARD COUNTY, UTAH

by

Roger B. Michaels and Lehi F. Hintze

1994

13°42′ E
243.6 MILS
1994 MAGNETIC DECLINATION
AT CENTER OF MAP

LOCATION MAP

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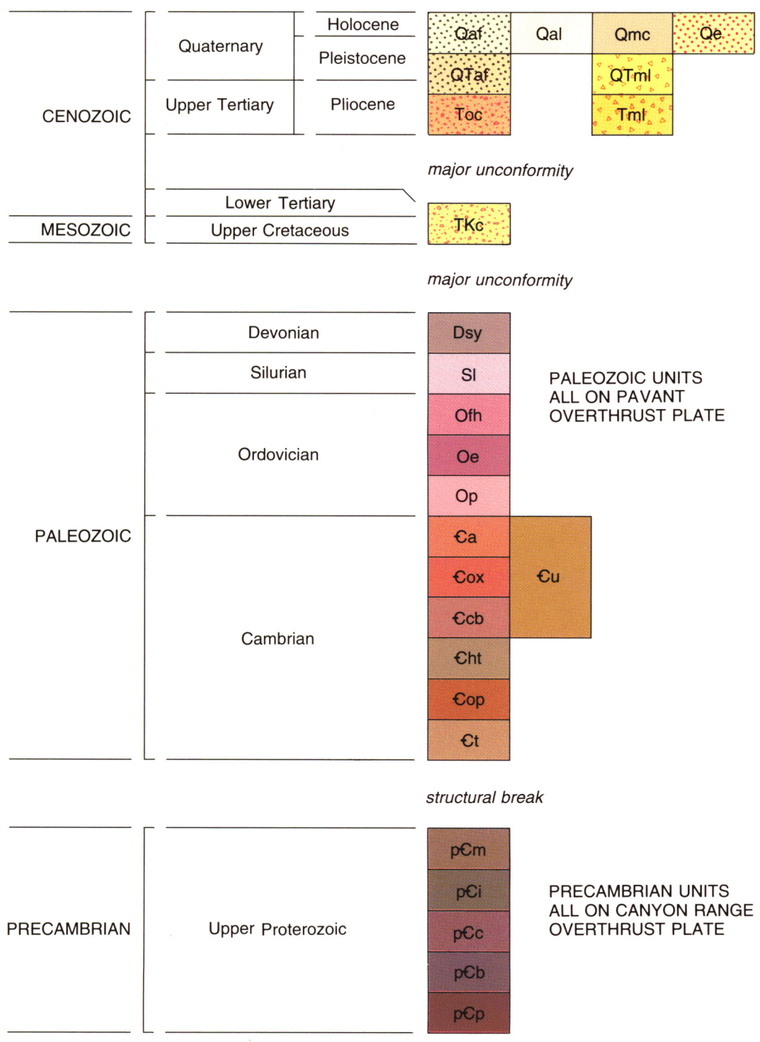
Plate 2
Utah Geological Survey Map 164
Geologic Map of the Scipio Pass Quadrangle

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qal — Alluvium of low-order streams-- *Fine-grained to locally coarse-grained, poorly sorted alluvium. Estimated thickness is up to 100 feet (30 m).*

Qe — Eolian deposits-- *Pinkish-gray dust, silt, and fine sand, carried by prevailing north-easterly winds to the Church Mountains and southwest flank of the Canyon Mountains. Locally intermixed with contemporaneous alluvial-fan and stream deposits. As much as 15 feet (5 m) thick. Qe/Qaf means that a thin deposit of Qe overlies and may be intermixed with Qaf alluvial-fan and stream deposits.*

Qmc — Colluvium-- *Deposits of mass wasting, shown on map only where they significantly conceal bedrock. Made of debris derived from bedrock units upslope from colluvial deposits. Locally may be as much as 100 feet (30 m) thick.*

Qaf — Young alluvial-fan and stream deposits-- *Composed mainly of gravel, grit, sand, and silt. As mapped, it includes alluvium in steeper stream valley bottoms above the heads of fans. Also locally includes a major component of eolian silt and fine sand. Maximum thickness not known, but may be several hundred feet on the slope of major fans.*

QTaf — Old alluvial-fan deposits-- *Poorly sorted, angular to subrounded boulders, cobbles, gravel, sand, and silt. Uncemented but surficial clasts commonly show well-developed caliche on the bottom side. Thickness estimated to be as much as a few hundred feet (100+ m).*

QTml — Landslide and colluvial deposit-- *Broken blocks and masses of Eureka Quartzite and soil that is rich in angular quartzite fragments. Thickness probably a few tens of feet (10+ m).*

Tml — Old landslide deposit-- *Composed principally of blocks of Eureka Quartzite, the largest are 12 feet (4 m) in diameter. Deposit may be more than 30 feet (10 m) thick locally.*

Toc — Oak City Formation-- *Poorly sorted, unbedded, mostly uncemented materials composed of large to small boulders, cobbles, pebbles, and sand derived from local uphill sources. Clasts range from subangular to well-rounded; most are subrounded. Thickness ranges from zero to at least several hundred feet (100+ m).*

TKc — Canyon Range conglomerate-- *Coarse bouldery conglomerate with a red or gray sandstone matrix. Basal part has mostly clasts of Cambrian and Precambrian quartzite; upper part includes limestone boulders and sandstone beds. Thickness 792+ feet (242+ m).*

Dsy — Sevy Dolomite-- *Light-gray, fine-grained, laminated, locally cherty dolomite. Top not exposed. Partial thickness in this quadrangle is 423 feet (129 m).*

Sl — Laketown Dolomite-- *Medium- to dark-gray, medium-grained, thick-bedded, cherty dolomite. Generally forms cliffs, but is locally fractured and less resistant in this quadrangle than elsewhere in western Utah. Measured thickness here is 832 feet (253.5 m).*

Ofh — Fish Haven Dolomite-- *Medium-dark-brownish-gray, fine-grained dolomite that weathers light olive gray. Generally chertless, locally includes dark-gray limestone beds. Measured thickness in this quadrangle is 261 feet (79.5 m).*

Oe — Eureka Quartzite-- *White, thin- to medium-bedded quartzite that generally forms cliffs. Locally brecciated and tectonically attenuated. Lowest Eureka beds are silty and weather pink, orange, or brown. Measured thickness is 180 feet (54 m).*

Op — Pogonip Group, undivided-- *Lower 300 feet (90 m) is medium-gray, slightly cherty, fine-grained, thick-bedded limestone that forms cliffs and ledges. Middle 1,046 feet (317 m) is medium-gray, thin- to medium-bedded, slope-forming shaly and silty limestone characterized by intraformational conglomerate beds. Upper 320 feet (98 m) is interbedded olive-gray shale and thin-bedded, fossiliferous limestone. Brachiopod coquinas make up some beds. Thin beds of sandstone appear near the top. Total thickness of Pogonip Group is 1,666 feet (505 m).*

Cu — Undivided Cambrian carbonate rocks-- *Dolomitic rocks found beneath Pogonip Limestone north of Scipio Pass. The rocks are locally brecciated and are probably mostly Ajax Dolomite, but may include slivers of Opex Formation and Cole Canyon and Bluebird Dolomites, undivided. Several hundred feet of strata are involved.*

Ca — Ajax Dolomite-- *Light-brownish-gray to dark-gray dolomite that weathers light olive gray and is generally thick bedded and forms steep slopes, ledges, and cliffs. Chert is locally present, as are stromatolitic algal structures. Measured thickness is 966 feet (295 m).*

Cox — Opex Formation-- *Gray, thin- to thick-bedded, shaly and bioclastic limestone, with thin interbeds of dolomite, shale, and sandstone. Bioclastic limestone beds in lower part contain the trilobite* Tricrepicephalus. *Measured thickness is 671 feet (205 m).*

Ccb — Cole Canyon and Bluebird Dolomites, undivided-- *Medium-gray to light-brownish-gray, fine-grained, thick-bedded dolomite, with interbeds of dark-gray dolomite that contain small white dolomite rods. Dolomite is locally mottled, probably from bioturbation during deposition. Measured thickness is 536 feet (164 m).*

Cht — Herkimer, Dagmar, and Teutonic Formations, undivided-- *Upper and lower parts are dark- to medium-gray limestone, mottled with blebs and stringers of light-olive-gray, silty dolomite. Lower part also includes oolitic and oncolitic algal structures, and* Glossopleura*-zone trilobites. Middle part includes distinctive light-gray to white, laminated dolomite beds that locally include algal stromatolite structures. Measured thickness is 944 feet (303 m), but base of formation is not exposed here.*

Cop — Ophir Formation-- *Interbedded shale and thin-bedded limestone. Not exposed in this quadrangle. Thickness shown on cross section is 500 feet (150 m).*

Ct — Tintic Quartzite-- *Fine- to coarse-grained, indurated white quartzite. Not exposed in this quadrangle. Thickness shown on cross section is 3,000 feet (1,000 m).*

pCm — Mutual Formation-- *Pale-red or grayish-red, medium-grained, medium-bedded quarzite that locally shows small-scale cross bedding. Only partly exposed in this quadrangle. Thickness measured north of this quadrangle, in the Canyon Mountains, is 2,250 feet (690 m).*

pCi — Inkom Formation-- *Silty argillitic shale. Not exposed in this quadrangle. Thickness measured in the adjacent quadrangle to the north is 270 feet (84 m).*

pCc — Caddy Canyon Quartzite-- *Only partly exposed in this quadrangle. A few miles north of here, in the Canyon Mountains, the lower 750 feet (227 m) is silty and thin bedded; upper 1,170 feet (355 m) is light-grayish-white quartzite that weathers brown or orange, and forms cliffs and ledges.*

pCb — Blackrock Canyon Limestone-- *Only partly exposed in this quadrangle. Thin-bedded reddish-, brownish-, or olive-gray limestone that commonly contains algal oolites, pisolites, and stromatolites. In the Canyon Mountains, north of this quadrangle, its thickness was measured to be 560 feet (169 m).*

pCp — Pocatello Formation-- *Phyllitic, yellowish-brown quartzite, olive-gray siltstone, and light-olive-gray shale. Only a small part is exposed in this quadrangle. To the north in the Canyon Mountains a more complete section was measured to be 800 feet (250 m) thick, but the base of the formation is not exposed anywhere in the Canyon Mountains.*

MAP SYMBOLS

Contact

Normal fault-- *Dashed where approximately located, dotted where concealed; bar and ball on downthrown side.*

Thrust fault-- *Dotted where concealed; teeth on upper plate.*

30 / 70 — Strike and dip of bedding-- *Inclined, vertical, overturned.*

Gravel pit

Prospect pit

LITHOLOGIC COLUMN

AGE	MAP UNIT	MAP SYMBOL	THICKNESS feet	THICKNESS meters	LITHOLOGY
QUATERNARY	Alluvium, colluvium, eolian silt, young (Q) and old (QT) alluvial-fan and old landslide deposits	Qal,Qmc, Qe,Qaf, QTaf, QTml	0 to several hundred		
PLIOCENE	Old landslide deposit	Tml	0-30	0-10	
	Oak City Formation	Toc	0 to several hundred		
LOWER TERTIARY-UPPER CRETACEOUS	Canyon Range conglomerate	TKc	792+	242+	
DEVONIAN	Sevy Dolomite	Dsy	423+	129+	PALEOZOIC STRATA ARE ALL PART OF THE PAVANT OVER-THRUST PLATE
SILURIAN	Laketown Dolomite	Sl	832	254	cherty
ORDOVICIAN	Fish Haven Dolomite	Ofh	261	80	locally brecciated
	Eureka Quartzite	Oe	180	54	
	Pogonip Group, undivided	Op	1,684	513	ostracodes; brachiopods; trilobite fragments; intraformational conglomerate common; cherty
CAMBRIAN	Ajax Dolomite	Ca	966	295	algal stromatolites
	Opex Formation	Cox	671	205	bioclastic limestone; *Tricrepicephalus* trilobites
	Cole Canyon and Bluebird Dolomites, undivided	Ccb	536	164	white "twiggy bodies"
	Herkimer, Dagmar, and Teutonic Formations, undivided	Cht	994+	303+	algal stromatolites; white laminated boundstone; base concealed
	Ophir Formation	Cop	500	150	on cross-section only
	Tintic Quartzite	Ct	3,000	1,000	on cross-section only
	STRATA BELOW ARE ON CANYON RANGE OVERTHRUST PLATE				
PRE-CAMBRIAN	Mutual Formation	pCm	2,250*	690*	
	Inkom Formation	pCi	270*	84*	on cross-section only
	Caddy Canyon Quartzite	pCc	1,920*	585*	
	Blackrock Canyon Limestone	pCb	380	115	ooids and algal stromatolites
	Pocatello Formation	pCp	800+*	250+*	

*Only part of this formation is present in this quadrangle. Thickness figures given here are from Millard (1983).